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Low-temperature pyrolysis of the native heavy oil in the presence of the iron-based catalyst

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Abstract

© SGEM 2017. All Rights Reserved. Currently heavily developed light oil resources are being depleted, and the energy consumption is increasing. In this context, the task of developing the tight oil reserves is relevant and will soon become an essential resource for stabilizing and increasing the oil production. The share of tight oil (including heavy crude oil) is steadily increasing in the overall balance. Oil production will therefore be at the expense of these oil revenues in the coming years. These hydrocarbon resources are referred to as non-traditional, as they require the use of technologies and methods that differ from traditional methods of producing light oil. One such method is the thermal steam treatment of formation. It is characterized by the injection of the calculated volume of the heat carrier through the injection wells, the creation of a thermal rim and its subsequent movement using the unheated water in the reservoir towards the wells. However, the use of various complementary techniques, such as the injection of catalytic systems, will increase energy efficiency and intensify the recovery of heavy oil. The relevance of such research is unquestionable. This work has examined the structural changes in the interchangeability of the alternative oil contained in the oil-bearing sandstone sample, with impact on the latest process of catalytic and non-catalytic aquathermolysis. The sandstone specimen is taken from the Volga-Ural Province (Russia).

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Keywords

Aquathermolysis, Catalyst precursor, Extracted bitumen, Heavy crude oil, Steam injection

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